

**REMARKS**

In light of the above amendments and following remarks, reconsideration and allowance of this application are respectfully requested.

**I. STATUS OF THE CLAIMS AND FORMAL MATTERS**

Claims 1 and 4 are pending in this application. In this response, claim 1 and the Abstract have been amended. Claims 2, 3, 5 and 6 have been cancelled without prejudice to their subsequent prosecution in any continuing application or disclaimer of the proprietary rights set forth therein. No new subject matter has been added as a result of this amendment.

**II. THE REJECTIONS UNDER 35 U.S.C. § 103(a)**

In numbered paragraphs 2-5 of the Office Action, claims 1-6 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,216,551 to Fujii ("Fujii") in view of U.S. Patent Number 6,238,781 to Anderson et al. ("Anderson") or further in view of Japanese Patent JP 05-127004 to Inoue ("Inoue") or U.S. Patent No. 4,457,598 to Shimabukuro et al. ("Shimabukuro"). The rejections are traversed for at least the following reasons.

Independent claim 1 has been amended to recite the sequential layering of the stacked structure on the plastic substrate and is as follows:

an underlayer film made of aluminum oxide ( $\text{Al}_2\text{O}_3$ );  
an adhesive layer formed with a chrome film and a copper film  
from the underlayer film side;  
a reflection film made of silver (Ag);  
a reflectance adjusting layer;  
a protective film containing silicon monoxide ( $\text{SiO}$ ) and having a  
film thickness of not less than 5 nm and not more than 20 nm; and  
a water-repellent film having a compound containing fluorine and  
silicon and having a film thickness of not less than 1 nm and not more  
than 10 nm.

(Emphasis added). Therefore, in the instant invention, an adhesive layer 3 comprised of a chromium film 31 and copper film 32 is disposed between the underlayer film 2, which is aluminum oxide, and the reflection film 4, which is silver. ¶¶ 23, 24, 48 and 49. In this configuration, the chrome film has a strong adhesion with the aluminum oxide layer and the copper film has a strong adhesion with the silver reflection film. The use of this bilayer adhesive layer strengthens the adhesion between the underlayer film 2 and the reflection film 4. ¶ 27.

As presently understood by Applicants, Fujii is directed to a surface reflector comprised of a plastic substrate and a stacked structure formed on the plastic substrate as depicted in Figures 6, 7, 9, 10, 12, 16, 17 and 19. In some embodiments, the stacked structure includes a plastic or glass substrate overlaid with a chromium sulfide undercoat, which is in turn overlaid with a silver or aluminum-reflecting layer. *See e.g.* col. 4, lines 56-65. In other embodiments, the stacked structure includes a plastic or glass substrate with an undercoat made of an oxide formed thereon, a sulfide undercoat formed on the oxide undercoat and a silver reflecting layer formed on the sulfide undercoat. *See e.g.* col. 10, lines 3-17. There is no disclosure or suggestion in any embodiment of Fujii of an adhesive layer comprised of a chromium and copper film disposed between a reflection film and an underlayer film in order to increase adhesion between the two, as claimed by Applicants

As presently understood by Applicants, Anderson is directed to a transparent glass substrate with an anti-reflection coating. The anti-reflection coating in Anderson comprises a stack of thin layers of dielectric materials with alternatively high and low reflective indices. Col. 1, line 66 – col. 2, line 2. In contrast to Applicants' claimed invention, Anderson does not disclose or suggest a stacked structure containing a reflection film and an underlayer film with an adhesive layer comprised of a chromium film and a copper film disposed between the two.

Inoue, as presently understood by Applicants, is directed to a reflecting mirror having a lamination of layers disposed on a substrate. The lamination of layers in Inoue includes a chromium layer that is disposed on the substrate, a copper layer that is disposed on the chromium layer and a silver layer disposed on the copper layer. Although the lamination of layers includes a chromium and a copper layer, the chromium layer is adjacent to the substrate. Unlike in the instant invention, Inoue does not have an underlayer film of aluminum oxide between the chromium layer and the substrate.

Lastly, Shimabukuro as understood by the Applicants, is directed to an aluminum reflector having a base layer with a plurality of additional layers disposed on the base layer. The aluminum reflector layers comprise a base body upon which is formed a smoothing layer. The smoothing layer is an inorganic paint such as enamel or silicon oxide paint. A reflecting layer consisting of aluminum is formed on the smoothing layer. Finally, a protective layer consisting of a light-transmitting water insoluble inorganic oxide is formed on the aluminum-reflecting layer. Shimabukuro, however, does not disclose or suggest chromium and copper film layers disposed between an aluminum oxide underlayer and a silver reflection layer. Furthermore, although Shimabukuro teaches a protective film of silicon monoxide, it does not teach a film thickness between 5 nm and 20 nm as required by the instant application. With the use of this silicon monoxide protective film, the mirror obtains an increased durability since the film is required to be more than 5 nm thick. By requiring the film thickness to be not more than 20 nm, the deterioration of the reflecting characteristics is controlled. ¶ 50.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or to combine reference teachings either in the references themselves or in the general knowledge available to one of

ordinary skill in the art; second, there must be a reasonable expectation of success; third, the prior art reference or references must teach or suggest all the claim limitations. M.P.E.P. § 2143. The motivation or teaching to make the claimed combination by modifying or combining prior art references must be found in the prior art and not in the Applicant's disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

With respect to the first prong of the test for obviousness, there is no motivation to combine Fujii with Anderson. In fact, Anderson teaches away from a reflecting surface. Anderson specifically teaches how to decrease a surface's reflection with the use of antireflection coatings. It is well established that if a reference teaches away from an invention, that finding can defeat an obviousness claim grounded on that reference. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 (Fed. Cir. 2000). Hence, there is no motivation or teaching to make the reflecting mirror of the instant invention by either modifying or combining the cited prior art references. Regarding the third prong of the test, none of the cited references teach "an adhesive layer formed with a chrome film and a copper film" that is disposed between an underlayer film made of aluminum oxide and a reflection film made of silver or a silicon monoxide protective film having a thickness of not less than 5 nm and not more than 20 nm as required by revised independent claim 1. Therefore, a *prima facie* case of obviousness has not been established.

For at least the foregoing reasons, it is respectfully submitted that revised independent claim 1 patentably distinguishes over those portions of Fujii, Anderson, Inoue and Shimabukuro relied upon by the Examiner and is allowable. Furthermore, claim 4 that depends from claim 1 is allowable therewith.

The Examiner has apparently made of record, but not applied, several documents. Applicants appreciate the Examiner's implicit finding that these documents, whether considered

alone or in combination with others, do not render the claims of the present invention unpatentable.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicant's undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

**CONCLUSION**

In view of the foregoing, it is believed that all of the claims in this application are patentable over the prior art, and an early and favorable consideration thereof is solicited.

Please charge any fees incurred by reason of this response and not paid herewith to Deposit Account No. 50-0320.

A Notice of Allowance is earnestly solicited.

Respectfully submitted,  
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